" fibres lax, and the veſſels about it immoderately " diſtended."

Ariſtotle (10) expreſly ſays, that timid people, and thoſe of cold conſtitutions, have large hearts; on the contrary, that the bold, and thoſe of a warm temperament, have ſmall ones. Nor does this opinion of that excellent philoſopher ſeem ill founded; as women, children, and weakly men, from whom much courage is not looked for, are lax-fibred, and, conſequently, more liable to an enlargement of this organ, than thoſe of the human ſpecies, who are robuſt and tenſe fibred, from whom a manly exertion of courage is more to be expected.

LV. *An Account of ſeveral Experiments in Electricity: In a Letter to Mr.* Benjamin Wilſon, *F. R. S. By* Edward Delaval, *Eſq; F. R. S.*

SIR, Old Palace-yard, June 8, 1761.

Read Dec. 17, 1761. IT appears by the experiments mentioned in my letter to you, publiſhed in the fifty-firſt volume of the Philoſophical Tranſactions, that ſtones, and other earthy ſubſtances, are convertible by ſeveral methods, and particularly by different degrees of heat, from non-electrics into electrics.

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(10) Lib. iii. De Partib. Animal. cap. iv.

Since that time, I find it has been the opinion of ſome perſons, that this change does not *immediately* depend on the heat, but only *conſequentially*, by evaporating the moiſture, which, they ſuppoſe, returns again on the bodies cooling.

This ſuppoſition will naturally, at firſt view, preſent itſelf to every one, who conſiders the *beginning only* of thoſe experiments; but I did not think any careful obſerver, who had repeated them, or conſidered all the circumſtances of them, would have been miſled by it.

That you may judge the better of this, I ſhall mention the circumſtances of one of thoſe experiments particularly. When a common tobacco-pipe, or any other ſlender body of the like kind, is heated red-hot, it conducts the electric fluid as perfectly as when cold: on cooling, it gradually arrives at its moſt perfect electric ſtate in two minutes; and, in leſs than two minutes more, it entirely loſes its electric property again, though at that time it is not cold: it cannot, therefore, in that interval, have imbibed a moiſture ſufficient to have deſtroyed its electricity. Nor are any of the ſubſtances, employed in the experiment, of that kind of bodies, which are apt ſuddenly to draw moiſture from the air.

In confirmation of particular bodies requiring particular degrees of heat, to render them electric or non-electric, independent of moiſture, I ſhall acquaint you with a ſubſtance, which is affected by heat in an oppoſite manner to the former inſtances; for the degree of heat neceſſary to render the *other* ſubſtances electric, makes *this* non-electric.

The ſubſtance I am ſpeaking of is *iſland cryſtal*, (which is well known for its ſingular property of a double refraction) on a piece of which, I have made the following obſervations. 1ſt, After this piece of cryſtal has been rubbed, when the heat of the air is moderate, it ſhews ſigns of electricity, though not very ſtrong ones: 2d obſ. If the heat is increaſed, ſo as to be a little greater than that of the hand, it deſtroys its electric power entirely: 3d obſ. By cooling the ſtone again, the electric power is reſtored.

I immerſed *this* piece of cryſtal into a veſſel filled with quickſilver, and ſurrounded by ice, where it remained near two hours, when the weather was very cold: upon taking it out with a pair of tongs, (that it might not be altered by the heat of my hands) and rubbing it again, it was more ſtrongly electric than I had at any other time experienced; but, on placing it for a few minutes on the hearth, at ſome diſtance from the fire, its electric property was again deſtroyed, for rubbing would not occaſion any ſigns thereof.

Thus we ſee two different kinds of *fixed* bodies, the one of which acquires an electric property, with the ſame heat, with which another loſes it; while a third ſet of ſubſtances, as glaſs, &c. retain their electricity, through both the degrees of heat, neceſſary to the other two.

Some pieces of iſland cryſtal, which I have procured from different places, *have not the property of loſing their electricity by a moderate heat.* I have, in particular, a piece of that cryſtal, one part whereof, when gently heated, becomes non-electric, while the other part with the ſame heat (or even with a much greater one) remains perfectly electric.

There are ſeveral other earthy ſubſtances, I find, whoſe electricity is deſtroyed by very different degrees of heat.

From conſidering, that the degree of heat, at which the iſland cryſtal, firſt mentioned in this letter, is in its moſt perfect electric ſtate, is leſs than the uſual heat of the air; and that a ſmall increaſe of that heat renders it non-electric; I do not think it improbable, that many ſubſtances, which are not known to be electric, may prove ſo, if expoſed to a greater degree of cold than they have hitherto been examined in.

I am,

SIR,

Your moſt humble ſervant,

E. Delaval.